

City of Santa Clara

Development Guidelines for Solid Waste Services

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CITY OF SANTA CLARA

DEVELOPMENT GUIDELINES FOR SOLID WASTE SERVICES

These guidelines are provided to assist in the proper design and installation of solid waste facilities consistent with the City's solid waste code, urban runoff control practices, City zoning codes and with City Franchise collection requirements. See text below for information on access requirements for typical side-load collection trucks that service residential areas of the city.

General information on solid waste generation and conversion factors that may be used for sizing facilities may be found in Exhibit 1. Attachment 1 shows typical generation factors for various businesses. This information is provided as a guideline and numbers should be confirmed with City staff or the City franchise hauler(s) for specific situations. Santa Clara County requirements for compactors are shown in Exhibits 2a and 2b. Exhibit 3a provides bin dimension information.

A. REQUIREMENTS FOR ALL NEW DEVELOPMENTS AND RETROFITS

1. **Solid Waste Services Required.** Santa Clara requires separate solid waste services per parcel unless an agreement has been recorded to provide joint use of this service for more than one parcel. Solid waste services consist of both garbage, recycling and organics collection by the City's franchise hauler(s). Mission Trail Waste Systems (408) 727-5365 is the exclusive franchise hauler in areas zoned for residential or commercial use. Contact the Street Department at (408) 615-3080 for a list of non-exclusive franchise haulers that are eligible to provide service in areas zoned for industrial use.
2. **Garbage Accumulation Limited.** In accordance with Santa Clara City Code (SCCC) section 8.25.120, all refuse from residential, commercial and industrial properties within the City must be collected at least once week, unless otherwise approved in writing.
3. **Commercial Bin Sizing.** SCCC 8.25.080 requires that sufficient number of containers be procured and maintained for receiving a holding all refuse that is produced, created or accumulated on the premises during one week, unless a more frequent collection schedule is provided to such premises. The size of non-compacted recycling and compacted garbage services is based on the number of units, proposed development layout, and frequency of collection. Service levels generally require City review and discussions between applicants and the City's franchised collection contractor(s) for solid waste services to assure sufficient service levels are provided before garbage containers or compaction equipment is

selected and approved. Please contact the Street Department at (408) 615-3080 for additional information.

4. **Commercial Collection Options.** The type of service selected depends on the volume of material generated and pickup frequency desired. Collection bin options are:
- a) *Front End Load Bins* – These are bins which are emptied over the front of the collection vehicle and then returned for service. Bins are available between 1 cubic yard and 8 cubic yard bin sizes with varying dimensions. Push and return services are available for specifically-sized bins. A plan view of a front-end load truck may be found in Figure 3a. Schematics of front load bins may be found in Exhibit 3b.
 - b) *Roll-Off Bins* – These are larger bins which are emptied by placing the entire container onto the back of the collection vehicle for hauling and disposal. The emptied bin is then returned. Bins are available between 10 cubic yard and 40 cubic yard bin sizes. No push and return services are available for these types of bins.
 - c) *Compactor Bins* – Front end/rear load and roll-off bins are suitable for garbage and recycle collection.
 - Front load/rear load compactors are picked up on site and deposited directly into the collection vehicle. If weight of compactor can not be pushed by a single employee, service is subject to special handling fees (push/pull charges).
 - Roll-off compactors can be either stationary or self-contained.
 - Stationary roll-off compactors. The crushing unit stays on site while the container is taken to the landfill. The compactor body is bolted to the customer's concrete pad. The design and intent of this style of compactor is for *dry waste*. Stationary compactors may be subject to special handling fees or "disconnect & connect charges".
 - Self-contained roll-off compactors. The crushing unit (packer body) and container are welded together into a single unit. The complete unit is loaded onto the hauler's roll-off truck and taken to the landfill and then returned. This style of compactor is designed for to handle *moist waste* but may also be used for dry waste.
- Compacted bins offer the advantage of using a lower number of garbage bins due to a higher collection volume as a result of compaction. Use may result in added convenience and/or collection cost savings. Self contained roll-off compactors may be subject to special handling fees or "turn-around charges".
5. **Collection truck access.** Collection trucks require a minimum 40-foot straight approach clearance and a minimum 40-foot turning radius. Height clearance for a

solid waste collection vehicle should be no less than 14.5 feet in drive-mode and 20 feet for service mode. Private roads must be constructed to accommodate weights of 60,000 pounds. Haulers are not responsible for normal wear and tear damage to private roadways.

- **SINGLE-FAMILY SIDE LOAD.** Typically side-load trucks are used to service single-family residential areas which collect 30, 32, 64, or 95 gallon wheeled carts. The truck requires a minimum of 33 feet of turning radius (66 feet of curb to curb diameter for a 180 degree turn). Single-family services include trash, yard waste and recycled material collection. All homes within a development must be serviced in a consistent manner with all containers either on the street or on private property.
- **STINGER/FORK TRUCK.** These specially-sized vehicles allow bin collection to occur on sites with constrained space limitations in residential and/or commercial sites. These vehicles transfer bins from confined spaces to areas that collection trucks can access. Scout trucks require:
 - Minimum of 8 feet vertical clearance (9 feet is preferred) and 9 feet horizontal clearance.
 - Minimum of 12 feet of unobstructed straight approach. Truck length is 25 feet with fork extended.
 - Maximum bin size is 4 cubic yards. Bin load may be compacted or non-compacted.
 - Designation of an area where scout trucks may place bins for front-end load collection truck pickup. Area pad shall be designed to provide sufficient bin space, access and load capacity for collection truck (see Figure 3).

B. SOLID WASTE ENCLOSURES*

1. GENERAL

- a) **Drainage.** The City of Santa Clara stormwater permit requires that all new solid waste enclosures shall drain to the sanitary sewer. SCCC 13.20.060 states that the discharge of garbage or solid industrial waste in to any storm drain or natural outlet or channel is a public nuisance. In certain circumstances, it may be necessary to retrofit drains to discharge into the sanitary sewer. All other enclosures shall be covered and located 25 feet or more from any storm drain inlet.
- b) **Slope Required.** The applicant shall install a slope at enclosure entrance, with a minimum gradient of 2% but no greater than 4%, to prevent outside stormwater run off from entering the enclosure. Stormwater inside enclosure(s) shall drain into the sanitary sewer.

- c) **Wall Protection.** The applicant shall install a minimum ten-inch wide, three-inch height curb along interior walls or six-inch diameter bollards or angle irons to prevent wall damage. Property owner is responsible for damages to enclosure walls if wall protection is not properly installed.
- d) **Gate.** A double, swinging gate with bollards or J-hooks shall be installed at front of enclosure to provide a minimum of 120-degree swing area and a minimum, unobstructed **INSIDE** opening of 12 feet. J-hooks shall be installed to securely fasten open gate.
- e) **Site Layout Required.** Location, plan and elevation drawings of solid waste enclosure shall be shown on plans and submitted to the City for review and approval.

2. ENCLOSURES FOR FRONT LOAD SERVICES ONLY

- a) **Enclosure Dimension.** Refer to Figure 1 for enclosure dimensions; minimum **INSIDE** dimensions are 18.5 feet by 10.5 feet. The enclosure area must be large enough to store at least three containers, one for garbage, one for recycling and one for organic material.
- b) **Concrete Pad.** Enclosure to have six (6) inch thick minimum, reinforced concrete pads shall be installed to accommodate no less than 40,000 lbs.. The “approach/point of service” to have an eight (8) inch thick minimum, reinforced concrete pad that accommodates a fully loaded solid waste collection vehicle that weighs 60,000 lbs. with minimum width of 12 feet.
- c) **Ceiling or Trellis Covers.** Ceilings and trellises lower than 15-feet severely limit service access and may increase collection contractor’s service charges.
- d) **Fire Sprinkler Requirements.** Enclosures must be designed to accommodate fire sprinkler requirements set forth in the Fire Code.

3. ENCLOSURE FOR ANY COMBINATION OF THE FOLLOWING SERVICES: COMPACTOR, OPEN TOP ROLL-OFF SERVICES, AND/OR FRONT LOAD.

- a) **Enclosure Dimensions.** Refer to Figure 2 for enclosure dimensions; minimum **INSIDE** dimensions are 16 feet by 17 feet.
- b) **Power Supply.** When required, electrical power shall be provided for equipment in conformance with the National Electric Code.
- c) **Concrete Pad.** Eight (8) inch thick minimum, reinforced concrete pads shall be installed to accommodate not less than 60,000 pounds, which is the combined weight of trucks and compactor(s)/open-top roll-off container(s).
- d) **Ceiling and Trellis Covers.** Ceilings and trellises lower than 15-feet severely limit service access and are not recommended, except where required to reduce visual impacts.

C. ADDITIONAL REQUIREMENTS FOR SPECIFIC TYPES OF DEVELOPMENTS

1. FOOD ESTABLISHMENTS (Includes grocery stores, industrial sites with cafeterias, restaurants and take-out establishments)

- a) **Services Required.** Solid waste facilities shall be sized for adequate garbage, recycling and organics collection service. Pretreatment devices and tallow bins are required. Tallow bins shall be placed within the enclosure when possible; however, if enclosures are not sized to include the tallow bin(s), then a separate dedicated enclosure with drainage to the sanitary sewer for tallow bins shall be provided.
- b) **Organic Material Service Required.** Food establishments can generate large amounts of organic materials. Applicant shall include enclosure space for appropriate container(s).
- c) **Compactor Use To Be Considered.** Developments with food establishments may choose compactor garbage service. Proper compactor design can result in control of spills and result in potential overall cost savings due to a decrease in pickup and transport frequencies (compactors are required to be serviced at least once a week).
- d) **Pretreatment Device Required.** Pretreatment devices(s) and installation of hot and cold water through a mixing faucet with vacuum breaker shall be provided for compactor enclosures used by food establishments, as required by the County Health Department (See Exhibit 2).
- e) **Bin Type Requirement.** Bins that contain internal liner shall be used.

2. COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

- a) **Bin Sizing.** Per SCCC 8.25.100, commercial and industrial developments shall be sized for adequate garbage service. Generally, commercial and industrial developments with large volume and those adjacent to residential housing should consider use of compactor services for recycling and garbage. The applicant is alerted that compactors often require less frequent collections and transport resulting in potential overall cost savings.
- b) **Recycling Service Area Required.** Industrial/manufacturing/retail tenants can generate large amounts of recyclable materials. Applicant shall include enclosure space for recycling.

3. MULTI-LEVEL, MULTI-FAMILY DEVELOPMENTS

- a) **Services Required.** Multi-family residential garbage level of service must be calculated at a rate of no less than 20 gallons per unit.

- b) **Recycling Service Area Required.** Multi-family developments (equal to or greater than 5 units) shall have recycling container service areas. Recology South Bay currently has the exclusive franchise agreement to provide recycling services for multi-family developments. For more information, call 408-970-5100.
- c) **Chutes.** Chutes, if provided for on-site collection of material, shall comply with the following guidelines:
- i. **Application.** Contact City engineering department if recycled material chutes are proposed since special care must be taken to assure material does not hang up in chutes and to minimize contamination by trash. In addition, a property manager shall be available to monitor the chute daily (including weekends) to check operations, maintain bins and chutes, and avoid nuisance conditions.
 - ii. **Adequate Designated Recycled Area Required.** Provide adequate area for separate recycled material collection adjacent to chute area; property management to transport recycled material to central location for pickup.
 - iii. **Chute Design.**
 - 1. Provide 16 inch square chute doors (which is smaller than the 24 inch chute diameter) to preclude dumping of large items which may hang up in chute.
 - 2. Provide chute doors with side panels to avoid hands being caught in doors.
 - 3. Provide temporary “shut-off door” at end of chute to prevent disposal when receiving trash bins are being changed.
 - 4. Provide insulation around chute to reduce noise.
 - 5. Provide sanitary systems to minimize nuisance conditions:
 - Placement of the manufacturers optional, built-in water cleaning system, where appropriate^{**}
 - Use of the deodorizer device, where appropriate^{***}
 - Include positive, mechanical air ventilation of at least six (6) room volumes per hour or as designed for specific use by registered engineer. Fan switch shall be located at a convenient location near trash bins.
 - 6. Provide individual slide-out refuse cabinet with 15 pound plastic bag holder in each residential kitchen for plastic, tie-top disposal bags to be used for disposal into chutes.
 - 7. For chutes in excess of three floors, a baffle system to reduce the drop impact of material shall be included.
 - iv. **Others.**
 - 1. Adhere to fire code (City Fire Department will review).
 - 2. Conform to all Equipment Manufacturer’s requirements.

4. SINGLE-FAMILY DEVELOPMENTS

- a) **Services.** Single-family style service consists of weekly setouts by residents for curb-side pickup at single-family, duplex and triplex units. Pickups are provided for Garbage, Clean Green and Recyclables, each of which is described below.

- i. **Garbage Collection Service.** Putrescible and non-putrescible nonhazardous solid, semi-solid and liquid discarded material must be placed into franchise hauler's designated containers. Garbage may be placed into 20, 32, 64, or 95 gallon wheeled carts for curbside setout. The wheeled carts are issued by the franchise hauler (currently Mission Trail Waste Systems - 408-727-5365).
- ii. **Clean Green Collection Service.** Grass clippings, weeds, leaves, palm fronds, shrubs, tree trimmings, plant materials, flowers, and wood less than four (4) inches in diameter are to be placed into franchise hauler's designated containers. Garbage may be placed into 32, 64, or 95 gallon wheeled carts for curbside setout. The wheeled carts are issued by the franchise hauler (currently Mission Trail Waste Systems – 727-5365).
- iii. **Recyclables Collection Service.** Newspapers, mixed paper, corrugated cardboard, glass, Plastics #1 - #7, bi-metal cans, aluminum cans, ferrous metals, non-ferrous metals, glass containers, motor oil, household batteries are collected through the single-family curbside recycling program. Plastic, metal, and glass recyclables are to be placed in an 18-gallon plastic recycling tub issued by the franchise hauler (currently Recology South Bay – 408-970-5100). Mixed paper and cardboard are to be placed in paper bags for collection.

b) Design Considerations

- i. **Access.** Adequate access for carts should be provided between the curbside setout location and the storage area. Cart sizes are as follows: 32-gallon, 24 ¼ inches in length by 19 ¼ inches in width by 35 ½ inches in height; 64-gallon, 30 inches in length by 27 ½ inches in width by 40 inches in height; 95-gallon, 34 ½ inches in length x 29 ¼ inches in width x 46 ¾ inches in height. The 32-gallon cart holds a 112 pound load; the 64-gallon cart holds a 200 pound load; the 95 gallon holds up to 300 pounds. Property frontage must be designed to accommodate the set-out of the wheeled carts in the street, with the wheels touching the curb.
- ii. **Storage.** SCCC 8.25.080 requires containers to be stored in the rear or side yard of the property.
- iii. **Coordination.** Designs shall clearly show proposed storage locations and access route for setouts and setbacks of carts and cans.

* Required for commercial, multi-family bin services. The City's franchised collection contractor for a solid waste service provides review assistance for enclosure dimensions and location(s) to assure proper is for service access, type and frequency for intended development. Coordination with the Planning division is necessary to assure consistency with City planning requirements and guidelines.

** Water cleaning system recommended with over 150 units; water system flow to flush inside chute walls shall discharge to wheeled bucket adequately designed to contain the flushed amount. (Consider installation of sanitary sewer in ground floor trash rooms.)

*** Deodorizers with over 100 units.

FIGURE 1a.
Front Load Service: "Approach Pad" / "Point of Service" Specifications
STRAIGHT IN APPROACH

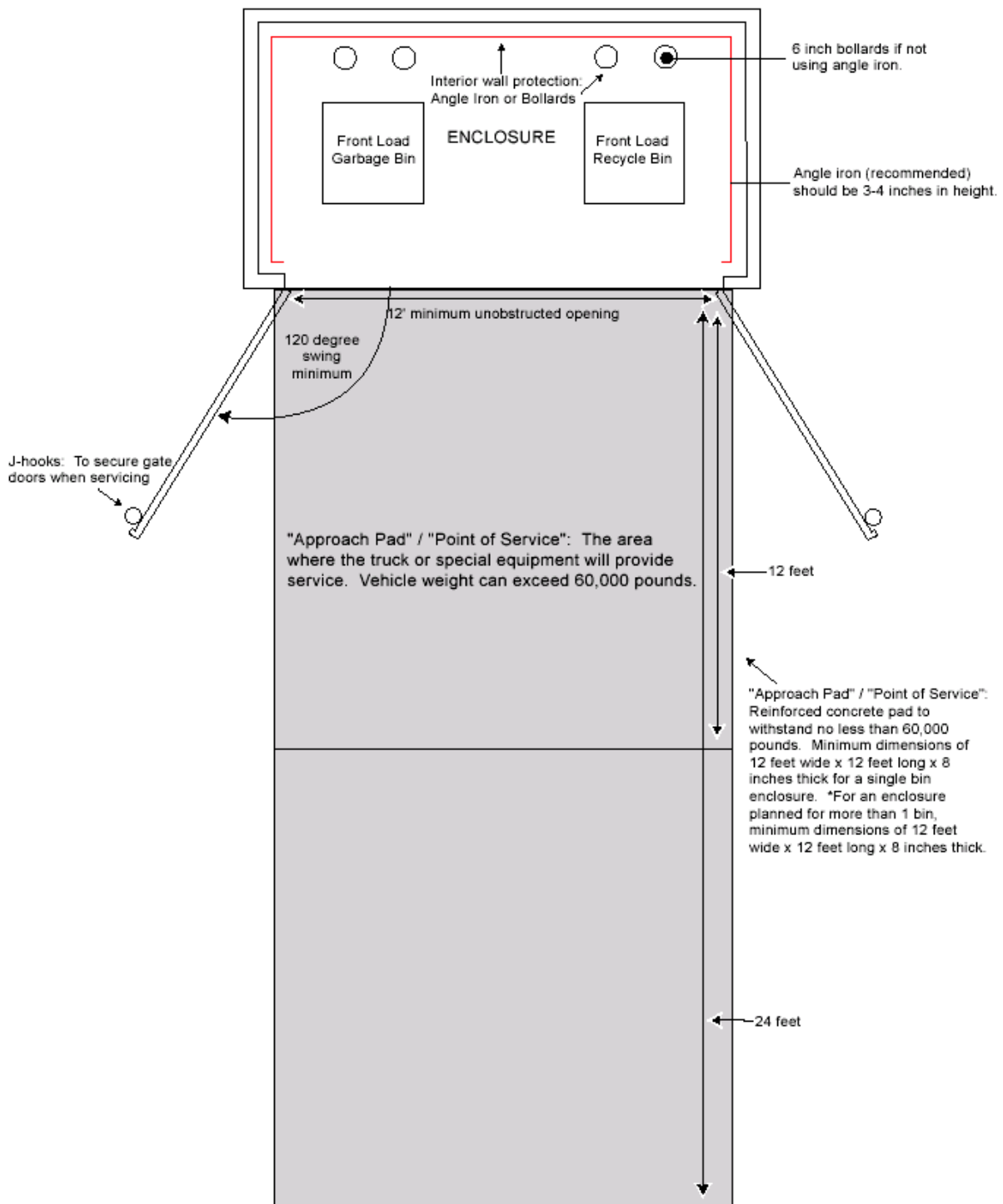


FIGURE 1b.
Front Load Service: "Approach Pad" / "Point of Service" Specifications
DRIVE BY APPROACH

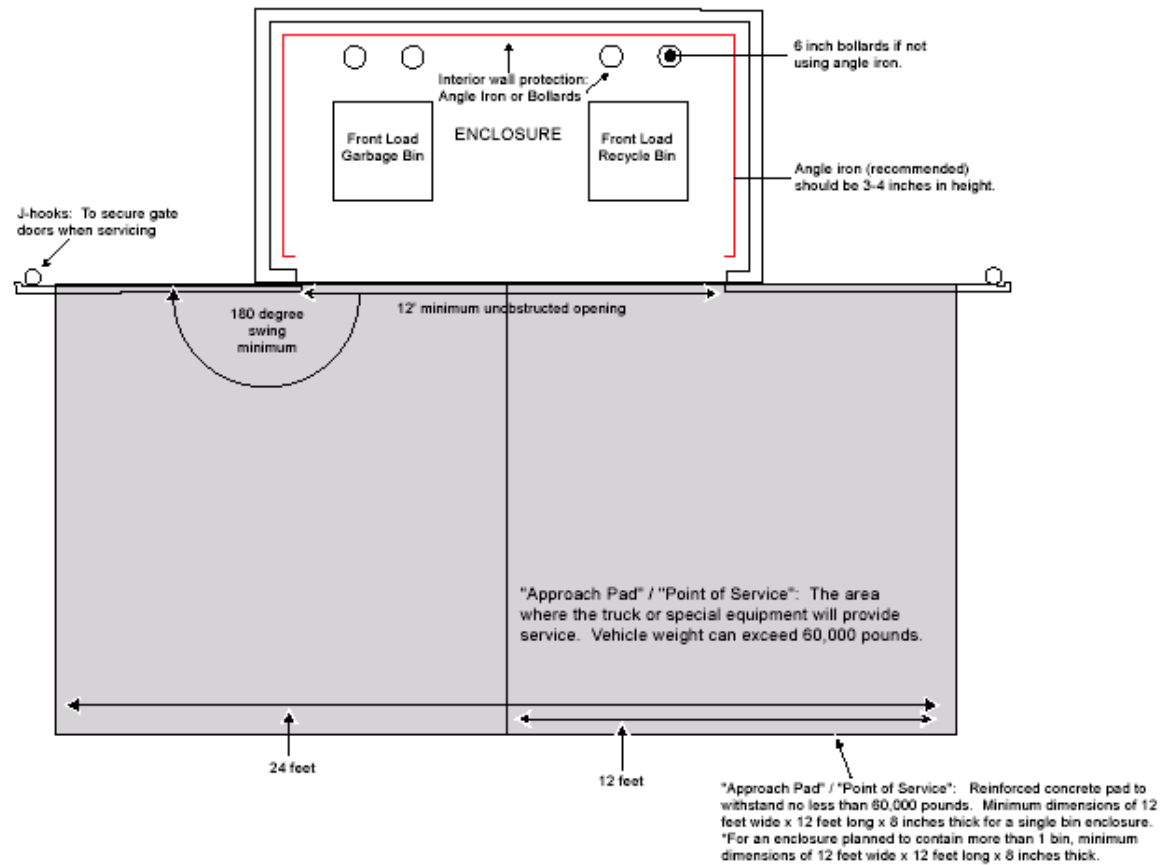


Figure 2
Combined Services Enclosure
Roll-Off/Front Load Compactor(s) and/or Front Load Open Top Services

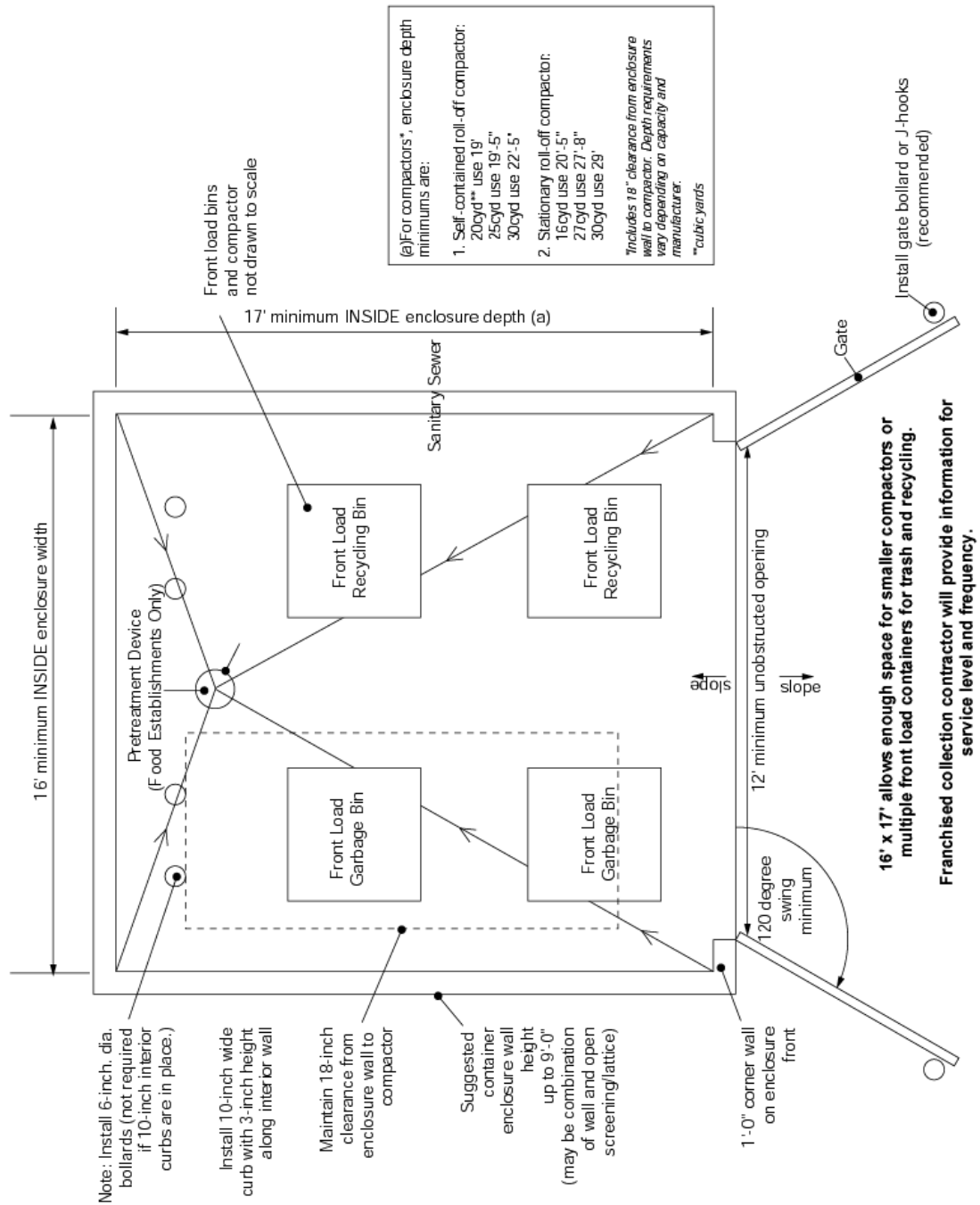


Figure 3
Front End Load Collection Truck Access
 (see notes (a) and (b) for side load and roll off trucks)

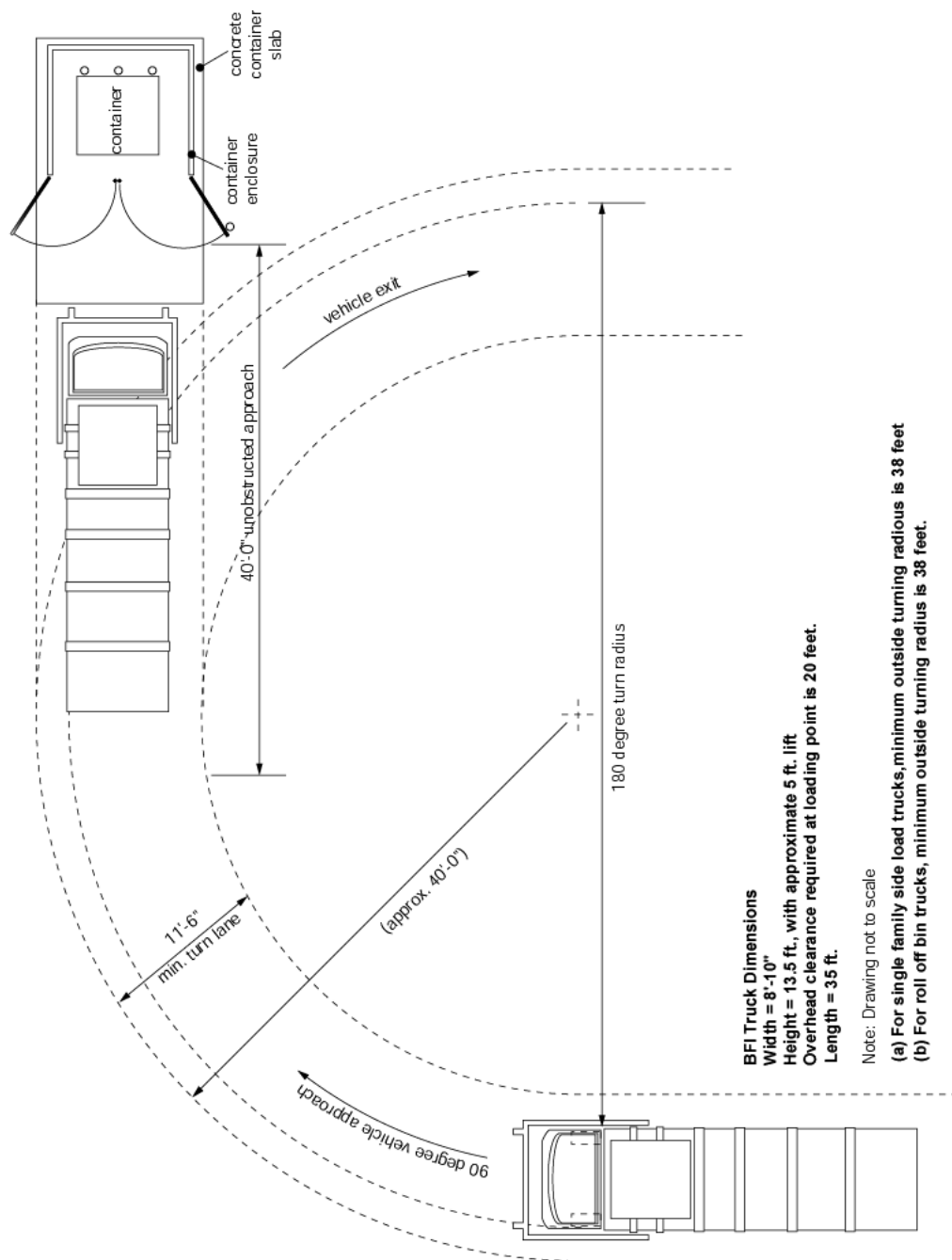


EXHIBIT 1
TYPICAL SOLID WASTE GENERATION AND CONVERSION FACTORS (a)

(A) REFUSE GENERATION FACTORS:

Single Family Residential Unit Generation:	41 pounds/week
Multi-Family Residential Unit Generation:	34 pounds/week
Senior Citizen Apartment/Studio Generation:	27 pounds/week

Commercial/Industrial Disposal – Size as required (b)

(B) RECYCLE GENERATION FACTORS:

Single Family Residential Unit Generation:	10 pounds/week
Multi-Family Residential Unit Generation:	7 pounds/week
Senior Citizen Apartment/Studio:	3 pounds/week
Yard Clippings Residential Unit Generation:	14.5 pounds/week

(C) DENSITY FACTORS:

Bin Waste Density (uncompacted):	100 pounds/cubic yard
Bin Recycle Density (uncompacted):	45 pounds/cubic yard
Bin Volume Compaction ratio:	3 volumes uncompacted to 1 volume compacted

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- (a) Provided as general guidelines: Site Specific Generation information may vary depending on type of development. Additional guidance may be obtained by calling the City of Santa Clara at (408) 615-3080.
- (b) Depending on type of business; confirm with city; also see Attachment 1 for commercial/industrial solid waste generation estimates.

ATTACHMENT 1

Business SIC Grouping Number	Business SIC Grouping Name	Disposal Rate tons/employee/year	Water Density Pounds/cubic yard
1	Agriculture/Fisheries	0.9	107
2	Forestry	0.2	100
3	Mining	1.8	100
4	Construction Companies	3	116
5	Manufacturing—Food/Kindred	1.6	74
6	Manufacturing – Apparel/Textile	0.9	103
7	Manufacturing – Lumber and Wood Product	3.1	134
8	Manufacturing – Furniture / Fixtures	2.4	145
9	Manufacturing – Paper / Allied	0.6	100
10	Manufacturing – Printing/ Publishing	0.8	88
11	Manufacturing – Chemical / Allied	0.9	135
12	Manufacturing – Primary / Fabrication Metal	0.7	122
13	Manufacturing – Industrial Machinery	0.2	69
14	Manufacturing – Electronic Equipment	0.5	63
15	Manufacturing – Transportation Equipment	0.4	76
16	Manufacturing – Instruments / Related	1.2	121
17	Manufacturing – Other	3.1	122
18	Trucking and Warehousing	1.9	95
19	Transportation – Air	1	82
20	Communications	1.5	98
21	Utilities	.03	73
22	Transportation – Other	1.3	73
23	Wholesale Trade – Durable Goods	0.9	65
24	Wholesale Trade – Nondurable Goods	0.9	87
25	Retail Trade – Building Material and Garden	3.3	121
26	Retail Trade – General Merchandise Stores	0.3	87
27	Retail Trade – Food Store	2.9	84
28	Retail Trade – Automotive Dealers & Service	0.6	84
29	Retail Trade – Restaurants	3.1	109
30	Retail Trade – Other	1.9	72
31	Finance / Insurance / Real Estate / Legal	0.3	88
32	Services – Hotels / Lodging	2.1	97
33	Services – Business Services	1.7	87
34	Services – Motion Pictures	1.1	169
35	Services – Medical Heath	1.5	75
36	Services – Education	0.8	73
37	Services—Other Professional	1.2	104
38	Services – Other Misc.	0.9	90
39	Public Administration	0.4	89

Source: “1999 Statewide Waste Characterization Study.” California Integrated Waste Management Board December 1999. Solid Waste Characterization Database, October 15, 2004
<http://www.ciwmb.ca.gov/WasteChar/DispRate.htm>.



TO: FOOD OPERATORS, CONTRACTORS, and DESIGNERS
FROM: PLAN REVIEW AND CONSTRUCTION UNIT
CONSUMER PROTECTION DIVISION
DEPARTMENT OF ENVIRONMENTAL HEALTH
DATE: MARCH 25, 2002
SUBJECT: OUTDOOR GARBAGE COMPACTORS

Outside garbage compactors may be installed at retail food establishments under the following conditions:

1. The installation has been approved by the local Building and Planning Departments
2. The entire compactor and storage bin is completely fly, maggot, and rodent-proof, i.e., all doors, covers, and access panels are provided with gaskets and are tight-fitting.
3. Compactors are installed on concrete pads that slope to a sanitary sewer drain. The concrete pad and sewer drain must be accessible for cleaning and designed as follows:
 - a) Only the concrete slab under and immediately around the compactor unit is to be tributary to the sanitary sewer drain¹.
 - b) All contiguous parking or walkway areas must drain away from the slab to appropriate storm sewer drains.
 - c) Rainwater must not drain into the sanitary sewer drain. Installation of a roof system over the area may be necessary. In this case the local Building Department may require a fire suppression system in this structure. Check with the your local Building or Fire Department representative for the current requirements.
4. Hot and cold water, through a mixing-type faucet, and outfitted with an approved anti-siphon device is required².
5. The appropriate refuse collection company removes compacted garbage at intervals that comply with local ordinances and this departments requirements.
6. A schedule of cleaning and maintenance is provided at the time of building clearance.

¹ Compactor units that are entirely self-contained, e.g., the crushing unit and container are welded together, and are removed as a unit to the landfill for dumping will be exempted from the sanitary sewer drain requirements.

² Not needed if the compactor design prevents leakage as noted above.

EXHIBIT 3

FRONT-LOAD LOADING CONTAINERS

Container Description		Container Dimensions (O.D.)		
Capacity (In Cubic Yards)		Length	Width	Height
One		72"	26"	30.25"
Two		72"	36"	38"
Three		72"	42"	48.5"
Four		72"	54"	48.5"
Six		72"	54"	72.5"
Eight		72"	66"	80"

FRONT-LOAD LOADING CONTAINERS

Container Description		Container Dimensions (O.D.)		
Capacity (In Cubic Yards)	Length	Width	Height	
Ten	14'	8'	2.5'	
Twenty	18'	8'	4'	
thirty	20'	8'	5'	
Four	22'	8'	6.5'	